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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE



In re the application of: **Masajirou INOUE et al.**

Serial No.: **10/010,254 (Conf. No. 5647)**

Filed: **December 6, 2001**

For: **METHOD FOR FABRICATING A SEAL-
INTEGRATED SEPARATOR**

Attorney Docket No.: **SIW-025**

Group Art Unit: Not Yet Assigned

Examiner:

Commissioner for Patents
Washington, DC 20231

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March 29, 2002

Date of Signature and of Mail Deposit

By:

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PRELIMINARY AMENDMENT

Dear Sir:

Preliminary to examination of the above-referenced patent application, please amend the application as follows.

In the Claims:

Please amend claims 1, 8 and 9 as follows:

1. (Amended) A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body and an inner seal and an outer

USSN 10/010,254
Group Art Unit: Not Yet Assigned

seal which are integrated on both sides of said separator body and which are disposed, side by side, around a reaction surface of an electrode during use, comprising the steps of:

forming a through hole in said separator body;

providing a first mold having grooves respectively positioned corresponding to said inner and outer seals disposed on one side of said separator body, a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole, and at least one gate communicating with each of said grooves, and a second mold having grooves respectively positioned corresponding to said inner and outer seals disposed on the other side of said separator body, and a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole;

holding said separator body between said first mold and said second mold; and injecting melted seal material to form said seals into each of said grooves in said first mold by supplying said melted seal material into said gate and injecting a portion of said melted seal material into each of said grooves in said second mold via said through hole.

8. (Amended) A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body having a communication port, and seals which are integrated on both sides of said separator body and which are disposed around a reaction surface of an electrode during use and around said communication port, comprising the steps of:

USSN 10/010,254
Group Art Unit: Not Yet Assigned

forming a through hole in said separator body;

providing a first mold having a groove positioned corresponding to said seal disposed on one side of said separator body, a first gate communicating with said groove, and a second gate separately formed from said first gate so as to directly communicate with said through hole, and a second mold having a groove positioned corresponding to said seal disposed on the other side of said separator body and communicating with said through hole;

holding said separator body between said first mold and said second mold and making said second gate directly communicate with said through hole; and

injecting melted seal material to form said seals into said groove in said first mold by supplying said melted seal material into said first gate, and injecting said melted seal material into said groove in said second mold via said through hole by supplying said melted seal material into said second gate.

9. (Amended) A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body and an inner seal and an outer seal which are integrated on both sides of said separator body and which are disposed, side by side, around a reaction surface of an electrode during use, comprising the steps of:

forming a through hole in said separator body;

providing a first mold having grooves respectively positioned corresponding to said inner and outer seals disposed on one side of said separator body, a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to

USSN 10/010,254
Group Art Unit: Not Yet Assigned

each other at a position corresponding to said through hole, a first gate communicating with each of said grooves, and a second gate separately formed from said first gate so as to directly communicate with said through hole, and a second mold having grooves respectively positioned corresponding to said inner and outer seals disposed on the other side of said separator body, and a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole;

holding said separator body between said first mold and said second mold and making said second gate directly communicate with said through hole; and

injecting melted seal material to form said seals into said connecting cavity and into each of said grooves in said first mold by supplying said melted seal material into said first gate, and injecting said melted seal material into said connecting cavity and into each of said grooves in said second mold via said through hole by supplying said melted seal material into said second gate.

USSN 10/010,254
Group Art Unit: Not Yet Assigned

REMARKS

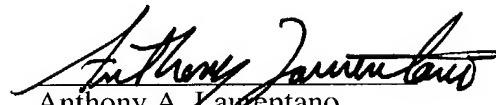
Preliminary to examination of this application, please amend claims 1, 8 and 9 as set forth above. This amendment attends to minor formal matters by removing multiple dependencies and correcting grammar, and is not related to issues of patentability. Support for the amendment to the claim can be found throughout the specification, Figures and claims as originally filed.

Applicants respectfully submit that the foregoing amendments introduce no new matter. Entry of the foregoing Preliminary Amendment is in order and requested.

If there are any questions regarding the proposed amendments to the application, we invite the Examiner to call Applicants' representative at the telephone number below.

Respectfully submitted,

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Date: March 29, 2002

USSN 10/010,254
Group Art Unit: Not Yet Assigned



VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Claims:

Please amend claims 1, 8 and 9 as follows:

1. (Amended) A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body and an inner seal and an outer seal which are integrated on both sides of said separator body and which are disposed, side by side, around ~~an electrode's~~ a reaction surface of an electrode during use, comprising the steps of:

forming a through hole in said separator body;

providing a first mold having grooves respectively positioned corresponding to said inner and outer seals disposed on one side of said separator body, a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole, and at least one gate communicating with each of said grooves, and a second mold having grooves respectively positioned corresponding to said inner and outer seals disposed on the other side of said separator body, and a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole;

holding said separator body between said first mold and said second mold; and

USSN 10/010,254
Group Art Unit: Not Yet Assigned

injecting melted seal material to form said seals into each of said grooves in said first mold by supplying said melted seal material into said gate and injecting a portion of said melted seal material into each of said grooves in said second mold via said through hole.

8. (Amended) A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body having a communication port, and seals which are integrated on both sides of said separator body and which are disposed around ~~an electrode's~~ a reaction surface of an electrode during use and around said communication port, comprising the steps of:

forming a through hole in said separator body;

providing a first mold having a groove positioned corresponding to said seal disposed on one side of said separator body, a first gate communicating with said groove, and a second gate separately formed from said first gate so as to directly communicate with said through hole, and a second mold having a groove positioned corresponding to said seal disposed on the other side of said separator body and communicating with said through hole;

holding said separator body between said first mold and said second mold and making said second gate directly communicate with said through hole; and

injecting melted seal material to form said seals into said groove in said first mold by supplying said melted seal material into said first gate, and injecting said melted seal material into said groove in said second mold via said through hole by supplying said melted seal material into said second gate.

USSN 10/010,254
Group Art Unit: Not Yet Assigned

9. (Amended) A method for fabricating a seal-integrated separator for a fuel cell, said seal-integrated separator including a separator body and an inner seal and an outer seal which are integrated on both sides of said separator body and which are disposed, side by side, around ~~an electrode's~~ a reaction surface of an electrode during use, comprising the steps of:

forming a through hole in said separator body;

providing a first mold having grooves respectively positioned corresponding to said inner and outer seals disposed on one side of said separator body, a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole, a first gate communicating with each of said grooves, and a second gate separately formed from said first gate so as to directly communicate with said through hole, and a second mold having grooves respectively positioned corresponding to said inner and outer seals disposed on the other side of said separator body, and a connecting cavity for forming a seal bridge at least partially connecting said inner and outer seals to each other at a position corresponding to said through hole;

holding said separator body between said first mold and said second mold and making said second gate directly communicate with said through hole; and

injecting melted seal material to form said seals into said connecting cavity and into each of said grooves in said first mold by supplying said melted seal material into said first gate, and injecting said melted seal material into said connecting cavity and into each of said grooves in said second mold via said through hole by supplying said melted seal material into said second gate.